

SCHWEGMAN ■ LUNDBERG ■ WOESSNER ■ KLUTH

United States Patent Application

SUBSTITUTE COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: <u>SYSTEMS AND METHODS FOR ADAPTIVE BIT LOADING IN A MULTIPLE ANTENNA ORTHOGONAL FREQUENCY DIVISION MULTIPLEXED COMMUNICATION SYSTEM.</u>

The specification of which was filed on <u>December 29, 2003</u> as application serial no. <u>10/750,587</u> and was amended on <u>August 6, 2004</u>.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 C.F.R. § 1.56 (attached hereto). I also acknowledge my duty to disclose all information known to be material to patentability which became available between a filing date of a prior application and the national or PCT international filing date in the event this is a Continuation-In-Part application in accordance with 37 C.F.R. § 1.63(e).

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

No such claim for priority is being made at this time.

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

Application Number 60/493937

Filing Date

7 August 8, 2003

I hereby claim the benefit under 35 U.S.C. § 120 or 365(c) of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose material information as defined in 37 C.F.R. § 1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application:

I hereby appoint the attorney(s) and/or patent agent(s) associated with Customer Number 45457 to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/organization/who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Schwegman, Lundberg, Woessner & Kluth, P.A. to the contrary.

Please direct all correspondence in this case to Customer Number 21186 at the address indicated below:

Schwegman, Lundberg, Woessner & Kluth, P.A. P.O. Box 2938, Minneapolis, MN 55402 Telephone No. (612)373-6900

belief are believed to be true; an made are punishable by fine or i	d further that these statements were r	knowledge are true and that all statements made on the made with the knowledge that willful false statements and the states of the United States Code and that issued thereon.	ents and the like so
Full Name of joint inventor num Citizenship: Post Office Address:	United States of America 1428 West Lindner	Residence: Mesa, AZ	
Signature: John	Mesa, AZ 85202 S. Sadowsky	Date: August 16, 2	2004
Full Name of joint inventor num Citizenship: Post Office Address:	United States of America 405 Becker Lane	Residence: Los Altos, CA	
Signature:Minn	Los Altos, CA 94022	Date:	
-			_
Full Name of joint inventor num Citizenship: Post Office Address:	ber 3: Sumeet Sandhu United States of America 25 Rio Robles East #408 San Jose, CA 95134	Residence: San Jose, CA	
Signature:		Date:	
Sume	et Sandhu		

Full Name of joint inventor n Citizenship: Post Office Address:	Russian Federation Verhne-Pecherskaya Str., 1-7 Nizhny Novgorod 603163 Russian Federation	Residence: Nizhny Novgorod Russian Federation
Signature:		Date:
Al	exander A. Maltsev	
Full Name of joint inventor no Citizenship: Post Office Address:	umber 5: Eric A. Jacobsen United States of America 10539 E. Salt Bush Drive Scottsdale, AZ 85259	Residence: Scottsdale, AZ
Signature:		Date:
Eri	c A. Jacobsen	
Full Name of joint inventor not Citizenship: Post Office Address:	United States of America 11835 Carmel Mountain Road Suite 1304-306 San Diego, CA 92128	Residence: San Diego, CA
Signature:	•	Date:
All	5 Sauri	

§ 1.56 Duty to disclose information material to patentability.

- (a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:
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 - (2) Each attorney or agent who prepares or prosecutes the application; and
 - (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.
- (d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

Attorney Docket No.884.A56US1



SCHWEGMAN ■ LUNDBERG ■ WOESSNER ■ KLUTH

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ማሳማው ተጠርሰ ተስ ይጠዩለነ Hills	number 1: John S. Sadowsky	•	
Full Name of joint inventor Citizenship: Post Office Address:	United States of America 1428 West Lindner Mesa, AZ 85202	Residence: Mesa, AZ	
Signature:		Date:	
	ohn S. Sadowsky		
Full Name of joint inventor Citizenship: Post Office Address:	United States of America 405 Becker Lane	Residence: Los Altos, CA	
_	Los Altos, CA 94022	Date: <u>4/1/04</u>	
Signature:	Annie Ho	Date: 4/1/02 .	
Full Name of joint inventor Citizenship:	number 3: Sumeet Sandhu United States of America 25 Rio Robles East #408	Residence: San Jose, CA	
full Name of joint inventor	number 3: Sumeet Sandhu United States of America 25 Rio Robles East		

X Additional inventors are being named on separately numbered sheets, attached hereto.

Page 3 of 4

Full Name of joint inventor	number 4: Alexander A. Maltsev	
Citizenship: Post Office Address:	Russian Federation Verhne-Pecherskaya Str., 1-7 Nizhny Novgorod 603163	Residence: Nizhny Novgorod Russian Federation
•	Russian Federation	
Signature:	Alexander A. Maltsev	Date:
	Alexander A. Maltsev	
	number 5 : Eric A. Jacobsen	
Citizenship:		Residence: Scottsdale, AZ
Post Office Address:	10539 E. Salt Bush Drive Scottsdale, AZ 85259	
Signature:	Eric A. Jacobsen	Date:
1	Eric A. Jacobsen	
• •		
Full Name of joint inventor	number 6: Ali S Sadri	
Citizenship:	United States of America	Residence: San Diego, CA
Post Office Address:	11835 Carmel Mountain Road Suite 1304-306	•
	San Diego, CA 92128	
Signature:		Date:
	Ali S Sadri	

Page 4 of 4

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 - (ii) Asserting an argument of patentability.

- (c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:
 - (1) Each inventor named in the application:
 - (2) Each attorney or agent who prepares or prosecutes the application; and
 - (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.
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Application Number

Filing Date

60/493937 August 8, 2003

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Filing Date: December 29, 2003

I hereby appoint the attorney(s) and/or patent agent(s) associated with Customer Number 45457 to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/organization/who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Schwegman, Lundberg, Woessner & Kluth, P.A. to the contrary.

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	United States of America 1428 West Lindner Mesa, AZ 85202	Residence: Mesa, AZ 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2	Taren gover sp. 200 2000 til 1989 200 til 1980 til
Signature: John	S. Sadowsky	Date:	
Full Name of joint inventor nun Citizenship: Post Office Address:	nber 2: Minnie Ho United States of America 405 Becker Lane Los Altos, CA 94022	Residence: Los Altos, CA	
Signature:	nie Ho	Date:	 .
- -			· · · · · · · · · · · · · · · · · · ·
Full Name of joint inventor num Citizenship: Post Office Address:	United States of America 25 Rio Robles East #408	Residence: San Jose, CA	
Signature:	San Jose, QA 95134	Date:	04

Citizenship:	Russian Federation	Residence: Nizhny Novgorod Russian Federation	
Post Office Address:	Verhne-Pecherskaya Str., 1-7 Nizhny Novgorod 603163 Russian Federation		
Signature:		Date:	
	Alexander A. Maltsev		
			
Full Name of joint inventor Citizenship: Post Office Address:	number 5: Eric A. Jacobsen United States of America 10539 E. Salt Bush Drive Scottsdale, AZ 85259	Residence: Scottsdale, AZ	
Signature:		Date:	
1	Eric A. Jacobsen		
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Citizenship: Post Office Address:	United States of America 11835 Carmel Mountain Road Suite 1304-306 San Diego, CA 92128	Residence: San Diego, CA	n phantid S 1997 BANGA 1997 BANGA
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Attorney Docket 10.884.A56US1

SCHWE MAN ■ LUNDBERG ■ WOESSNER ■ KLUTH

United States Patent Application substitute Combined declaration and power of attorney

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statements may jeopard	ize the validity of the arr	: herein of my ow se statements wer both, under Secti lication or any par	on knowledge are true and that all statements made on the made with the knowledge that willful false statement on 1001 of Title 18 of the United States Code and that tent issued thereon.	information and its and the like so is such will ful false
Full Name of joint inver				
Citizenship: Post Office Address:	United States 1428 West Li Mesa, AZ 852	dner	Residence: Mesa, AZ	
Signature:				
	John S. Sadowsky		Date:	_
Full Name of joint invent Citizenship: Post Office Address:		<u>le Ho</u> f America e	Residence: Los Altos, CA	
Signature:				
· · · · · · · · · · · · · · · · · · ·	Minnie Ho		Date:	
Full Name of joint invento Citizenship: Post Office Address:	United States 0 25 Rio Robles E #408 San Jose, CA 95	Argerica st	Residence: San Jose, CA	
Signature:	1			
	Sumeet Sandhu		Detc:	_
•				
X Additional inventors are l	peing named on separate	numbered sheet	s, attached hereto.	

Attorney Docket No.: 884.A56US1 Serial No. 10/750,587, Filing Date: December 29, 2003	,		Page 3 of 4
Full Name of joint inventor modification of the Post Office Address:	Russian Fe eration Verbue-Ped erskaya Str., 1-7 Nizhny Nov tored 603163	Residence: Nizhny Novgorod Russian Federation	
Signature:	Russian Fed pation	Date: 13 August, 201	4
Full Name of joint inventor nu Citizenship: Post Office Address:	mbet 5: Er c.A. Jacobsen United State : of America 10539 E. Sel Bush Drive Scottsdale, A'Z 85259	Residence: Scottsdale, AZ	
Signature:Eric	A. Jacobsen	Date:	_
Full Name of joint inventor nur Citizenship: Post Office Address:	nber 6: Ali § Sadri United State: of America 11835 Carms Mountain Road Suite 1304-3(§ San Diego, C. 192128	Residence: San Diego, CA	
Signature: Ali S	Sadri	Date:	_

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I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

No such claim for priority is being made at this time.

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

Application Number

Filing Date

60/493937

August 8, 2003

I hereby claim the benefit under 35 U.S.C. § 120 or 365(c) of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose material information as defined in 37 C.F.R. § 1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application:

I hereby appoint the attorney(s) and/or patent agent(s) associated with Customer Number 45457 to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/organization/who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Schwegman, Lundberg, Woessner & Kluth, P.A. to the contrary.

Please direct all correspondence in this case to Customer Number 21186 at the address indicated below:

Schwegman, Lundberg, Woessner & Kluth, P.A. P.O. Box 2938, Minneapolis, MN 55402 Telephone No. (612)373-6900

belief are believed to be t made are punishable by fi	rue; and further that these statements were m	nowledge are true and that all statements made ade with the knowledge that willful false states 1001 of Title 18 of the United States Code and a issued thereon.	ments and the like so
Full Name of joint invent Citizenship: Post Office Address:	or number 1: John S. Sadowsky United States of America 1428 West Lindner Mesa, AZ 85202	Residence: Mesa, AZ	
Signature:	John S. Sadowsky	Date:	
Full Name of joint invent Citizenship: Post Office Address:	or number 2: Minnie Ho United States of America 405 Becker Lane Los Altos, CA 94022	Residence: Los Altos, CA	
Signature:	Minnie Ho	Date:	
Full Name of joint invented Citizenship: Post Office Address:	United States of America 25 Rio Robles East #408 San Jose, CA 95134	Residence: San Jose, CA	
Signature:		Date:	
	Sumeet Sandhu		-

Full Name of joint inventor numb Citizenship: Post Office Address:	Russian Federation Verhne-Pecherskaya Str., 1-7 Nizhny Novgorod 603163 Russian Federation	Residence: Nizhny Novgorod Russian Federation
Signature:	nder A. Maltsev	Date:
Alexa	nder A. Maltsev	
Full Name of joint inventor numb Citizenship: Post Office Address: Signature: Eric A	Der 5: Eric A. Jacobsen United States of America 10539 E. Salt Bush Drive Scottsdale, AZ 85259 Jacobsen	Residence: Scottsdale, AZ Date:
Full Name of joint inventor numb	er 6: Ali S Sadri	
Citizenship: Post Office Address:	United States of America 11835 Carmel Mountain Road Suite 1304-306 San Diego, CA 92128	Residence: San Diego, CA
Signature:		Date:
Ali S S	Sadri	

Attorney Docket No.: 884.A56US1 Serial No. 10/750,587

Filing Date: December 29, 2003

§ 1.56 Duty to disclose information material to patentability.

- (a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:
 - (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
 - (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.
- (b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and
 - (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
 - (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on by the Office, or
 - (ii) Asserting an argument of patentability.

- (c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:
 - (1) Each inventor named in the application:
 - (2) Each attorney or agent who prepares or prosecutes the application; and
 - (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.
- (d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

Attorney Docket No.884.A56US1



United States Patent Application SUBSTITUTE COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: <u>SYSTEMS AND METHODS FOR ADAPTIVE BIT LOADING IN A MULTIPLE ANTENNA ORTHOGONAL FREQUENCY DIVISION MULTIPLEXED</u> COMMUNICATION SYSTEM.

The specification of which was filed on <u>December 29, 2003</u> as application serial no. <u>10/750,587</u> and was amended on <u>August 6, 2004</u>.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 C.F.R. § 1.56 (attached hereto). I also acknowledge my duty to disclose all information known to be material to patentability which became available between a filing date of a prior application and the national or PCT international filing date in the event this is a Continuation-In-Part application in accordance with 37 C.F.R. § 1.63(e).

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No such claim for priority is being made at this time.

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

Application Number 60/493937

Filing Date

August 8, 2003

I hereby claim the benefit under 35 U.S.C. § 120 or 365(c) of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose material information as defined in 37 C.F.R. § 1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application:

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belief are believed to be true made are punishable by fine	at all statements made herein of my own ke; and further that these statements were ne or imprisonment, or both, under Section the validity of the application or any paten	nade with the knowledge that willf 1001 of Title 18 of the United Stat	ul false statements and the like so
Full Name of joint inventor Citizenship: Post Office Address:	number 1: John S. Sadowsky United States of America 1428 West Lindner Mesa, AZ 85202	Residence: Mesa, AZ	
Signature:		Date:	
J	John S. Sadowsky		
-			
Full Name of joint inventor Citizenship: Post Office Address:	number 2: Minnie Ho United States of America 405 Becker Lane Los Altos, CA 94022	Residence: Los Altos, CA	
Signature:	Minnie Ho	Date:	
•			· da
Full Name of joint inventor Citizenship: Post Office Address:	number 3: Sumeet Sandhu United States of America 25 Rio Robles East #408 San Jose, CA 95134	Residence: San Jose, CA	
Signature:		Date	
Signature.	Sumeet Sandhu	Date.	
			di co ei

 \underline{X} Additional inventors are being named on separately numbered sheets, attached hereto.

Date: HU9, 10-04

Attorney Docket No.: 884.A56US1 Serial No. 10/750,587 Filing Date: December 29, 2003 Full Name of joint inventor number 4: Alexander A. Maltsev Russian Federation Residence: Nizhny Novgorod Russian Federation Citizenship: Post Office Address: Verhne-Pecherskaya Str., 1-7 Nizhny Novgorod 603163 Russian Federation Date: Signature: Alexander A. Maltsev Full Name of joint inventor number 5: Eric A. Jacobsen Citizenship: United States of America Residence: Scottsdale, AZ Post Office Address: 10539 E. Salt Bush Drive Scottsdale, AZ 85259 Signature: Eric A. Jacobsen Full Name of joint inventor number 6: Ali S Sadri **United States of America** Residence: San Diego, CA Citizenship:

11835 Carmel Mountain Road

Suite 1304-306 San Diego, CA #2128

Post Office Address:

Signature:

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 - (2) Each attorney or agent who prepares or prosecutes the application; and
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- (d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.